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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,504	11/05/2003	Tomio Mimura	244797US3XDIV	6275
22850	7590	07/31/2006	EXAMINER	
C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LAWRENCE JR, FRANK M	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/700,504

Applicant(s)

MIMURA ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/168,975.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>(2)</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. Figures 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

3. The title of the invention is not descriptive. A new title is suggested that is clearly indicative of the invention to which the claims are now directed.

The following title is suggested: "Amine recovery apparatus and decarbonation apparatus having same".

4. The disclosure is objected to because of the following informalities: A sentence claiming priority to the parent application must be inserted into the specification.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite because it recites "a carbon dioxide absorption section configured to remove carbon dioxide from the decarbonated exhaust gas," however the exhaust gas being treated in the absorption section has not yet been decarbonated. To overcome this rejection, "from the decarbonated exhaust gas" can be changed to "from a gas to produce the decarbonated exhaust gas." Claims 6-15 are rejected for depending from a rejected parent claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 5-7, 9, 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by either one of GB 2167738 A or JP 04-161225.

9. Either one of GB '738 or JP '225 teaches an adsorption column having a carbon dioxide absorption section for vapor-liquid contact of a gas with an amine solvent, and a downstream water washing section including several stages for the recovery of the solvent. Water overflowing a succeeding stage is fed to a preceding stage in each device (see abstracts, figures of each reference). The recitation of claim 6 that refluxed water is supplied as washing water does not add any structure that distinguishes the claim over the prior references.

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10. Claims 5-7, 9, 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii et al. (5,318,758).

11. Fujii et al. '758 teach an adsorption column (1) having a carbon dioxide absorption section (2) for vapor-liquid contact of a gas with an amine solvent, and a downstream water washing section (3) including several stages and spray nozzles (11) for the recovery of the solvent (see figures 2, 3, col. 5, lines 42-52, col. 6, lines 53-59, col. 7, lines 49-56, col. 9, lines 19-50). Water overflowing a succeeding stage is fed to a preceding stage in the washing section. The water can be supplied from regeneration tower refluxed water (33, 34, 38).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8, 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of GB '738, JP '225 or Fujii et al. '758 in view of Thonsgaard (6,183,540).

14. Any one of GB '738, JP '225 or Fujii et al. '758 discloses all of the limitations of the claims except that demisters are provided at outlets of the absorption section and the water washing sections in the respective stages. Thonsgaard '540 discloses a gas-sweetening column having several stages (72, 74, 76) and a demister (80) following each stage (see figure 2, col. 8, line 55 to col. 9, line 28). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the columns of any one of the primary references by

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including a demister after each stage in order to provide a means for collecting and recovering entrained solvent that would otherwise be passed out with the treated gas stream.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached PTO-892 form disclose gas treatment columns.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frank M. Lawrence  
Primary Examiner  
Art Unit 1724

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Frank Lawrence 72506